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SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W5-0019

START-02-F-00272

TRANSMITTAL MEMO

To: Nick Magriples, OSC
Removal Action Branch, U.S. EPA Region II

From: Dorothy M. Ponte and
Smita Sumbaly, Data Reviewers
Joseph Price, PM
START Region II

Subject: Cornell Dubilier Electronics Site
Data Validation Assessment

Date: 21 May 1996

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

TAL	8 samples
PCBs	4 investigative samples
	3 lot blank samples
	3 blind spike samples

- Matrices and Number of Samples

Air Filter + Solid Sorbent	10 samples
Air MCEF Filter	8 samples

- Sampling date: 23 April 1996

The final data assessment narrative and original analytical data package are attached.

cc: START PM Joseph Price
START FILE TDD #: 02-96-04-0003
TDD #: 02-96-04-0010
PCS #: 1316

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: 14 May 1996

TO: Nick Magriples, OSC
USEPA Region II

FROM: Dorothy M. Ponte
START Data Review Team

SUBJECT: QA/QC Compliance Review Summary

As requested quality control and performance measures for the data packages noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness	Blanks
Spectra Matching Quality	DFTPP and BFB Tuning
Surrogate Spikes	Chromatography
Matrix Spikes/Duplicates	Holding Times
Calibration	Compound ID (HSL, TIC)

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

	I Volatiles	II B/N/A	III Pesticide	IV Other
Acceptable as Submitted				
Acceptable with Comments			X	
Unacceptable, Action Pending				
Unacceptable				

Data Reviewed by: Dorothy M. Ponte Date:

Approved By: Joseph Soroka, Ph.D. Date: 5/20/96

Area Code/Phone No.: (908) 225-6116

NARRATIVE

CASE No. 1316

SITE NAME: Cornell Dubilier Electronics

South Plainfield, Middlesex County, New Jersey

Laboratory Name: Ecology and Environment, Inc. (EANDE)

INTRODUCTION:

The laboratory's portion of this Case consisted of 10 samples collected on 23 April 1996.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported No problems with the analyses of polychlorinated biphenyls in air media samples.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

Evaluation by Fraction

Pesticides/PCBs

_Y_ Holding Times	_Y_ Calibration Linearity
_Y_ Instrument Performance	_Y_ Blank
___ DDT RT/12 Minutes?	_Y_ Surrogate Recovery
_Y_ Retention Time Window	_Y_ Spike Recovery
_Y_ Analytical Sequence	_Y_ Compound ID (HSL,TIC)
___ DDT/Endrin Degradation	_Y_ Standards
_Y_ RT Check for DBC	_Y_ Chromatography

Comments:

1. Refer to Data Assessment Narrative

TOTAL REVIEW

DATA ASSESSMENT NARRATIVE

EANDE Project #: 9600.789 START RFP #s: 1316

SAMPLES: 10 Filter + Solid Sorbent Samples

LAB: Ecology and Environment, Inc. Lab ID: EANDE

SITE: Cornell Dubilier Electronics

Analysis: Target Compound List (TCL) - Polychlorinated Biphenyls (PCBs)

DATA ASSESSMENT:

The S.O.W. Document # OLM01.0 (Rev. 12/90) for evaluating organic data have been applied.

All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detects), "R" (unusable), or "JN" (presumptive evidence for the presence of the material at an estimated value). All action is detailed on the attached sheets.

Two facts should be noted by all data users. First, the "R" flag means that the associated data is unusable. In other words, due to significant QC problems, the analysis is invalid and provides no information on whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error.

Analytical data qualified as "JN" or "R" may not be used to demonstrate compliance with Toxicity Characteristic or Land Ban Regulations.

Reviewer's Signature: Dorothy Marian Porter Date: 05 / 17 /19 96

Verified By: _____ Date: ___/___/19__

A.2.2 Data Assessment (continued):

On 23 April 1996, the Region II Superfund Technical Assessment and Response Team (START) personnel collected four (4) investigative air tube (13-mm glass fiber filter plus Florisil solid sorbent) grab samples from the Cornell Dubilier Electronics site, South Plainfield, Middlesex County, New Jersey. Sample collection was performed at a calibrated flow rate of 0.1 liters per minute (L/min) for a period of 300 minutes providing a sample calculated air volume of 30 L. Of the four investigative samples, sample STN4-PCB was collected upwind (background). Within twenty-four hours of collection, investigative samples and QC samples (media blanks [3], blind spikes [3], analytical spikes [3], and desorption efficiency media blanks [15]) were shipped by Federal Express courier to Ecology and Environment, Inc. (EANDE), Analytical Services Center, Lancaster, New York. On 24 April 1996, samples were received at the laboratory. A representative of the laboratory verified that samples arrived intact, in a sealed shipping container, and with proper documentation. Samples were analyzed by the laboratory for Target Compound List (TCL) polychlorinated biphenyl (PCB) organic compounds in air (TO-10 PCB in Air) following procedures specified in NIOSH method number 5503 from the NIOSH Manual of Analytical Methods (NMAM), Fourth Edition, 15 August 1994.

Client identification (ID) and laboratory ID numbers are as follows:

Client ID No.	EANDE Sample ID No.	Matrix
STN1-PCB	43068.01	Air Filter + Florisil Sorbent
STN2-PCB	43069.01	Air Filter + Florisil Sorbent
STN3-PCB	43070.01	Air Filter + Florisil Sorbent
STN4-PCB	43071.01	Air Filter + Florisil Sorbent
LB-PCB-A	43065.01	Air Filter + Florisil Sorbent
LB-PCB-B	43066.01	Air Filter + Florisil Sorbent
LB-PCB-C	43067.01	Air Filter + Florisil Sorbent
Blind-PCB-A	43062.01	Air Filter + Florisil Sorbent
Blind-PCB-B	43063.01	Air Filter + Florisil Sorbent
Blind-PCB-C	43064.01	Air Filter + Florisil Sorbent

1. HOLDING TIMES:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following analytes in the samples shown were qualified because of holding time:

PCBs - Holding time requirements, as specified in NIOSH Method No. 5503 for polychlorobiphenyls (PCBs), were met by the laboratory. Reported sample stability for the solid sorbent Florisil tubes is 2 months. The sample stability is unknown for the 13-mm glass fiber filter cassette. However, air filter samples were analyzed within twenty-four hours after the validated time of sample receipt (VTSR) at the laboratory.

(2) BLANK CONTAMINATION:

Quality Assurance (QA) blanks, i.e., method, trip, field, rinse and water blanks are prepared to identify any contamination that may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following in the samples shown were qualified with "U" for these reasons:

A) Method Blank Contamination

PCBs - The following compounds were qualified as non-detected "U" in the associated samples due to method (lot) blank contamination:

Compound	Associated Samples

PCB compounds were not detected by the laboratory in the associated lot blank samples (Florisil Tube SKC Lot No. 377; Filter SKC Lot No. 9494). Therefore, data were not qualified based on method blank contamination.

B) Field or Rinse Blank Contamination

PCBs - The following compounds were qualified as non-detected "U" in the associated samples due to field blank contamination:

Compound	Associated Samples

Field blank samples were not collected for PCB analyses (2-10 field blanks are required by the method per set). Data were therefore not qualified due to field blank contamination. Additionally, the PCB investigative sample data is non-detected "U".

(5) CALIBRATION:

B. PERCENT RELATIVE STANDARD DEVIATION (%RSD) AND PERCENT DIFFERENCE (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 20% and %D must be < 20%. A value outside of these QC limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ" (if %D or RSD > 40%). If there is a gross deviation of %RSD and %D, the non-detects may be rejected ("R").

Initial Calibration

PCB - Positive values of the following compounds were qualified as estimated "J" in the associated samples because the Initial Calibration %RSD is between 20-90% when the mean RRF is > 0.05):

Compound	Associated Sample(s)

Initial calibration %RSD and mean RRF values did not exceed specified QC criteria for primary GC column RTX-35 and confirmation GC column RTX-5. Data were therefore not qualified due to Initial Calibration QC criteria.

Continuing Calibration

PCB - The following compounds were qualified as estimated "J" because the Continuing Calibration %D is between 20-90% when the 0.4 *u*g/mL RRF is > 0.05:

Compound	Associated Sample(s)

Continuing calibration %D and 0.4 *u*g/mL RRF values did not exceed specified QC criteria for primary GC column RTX-35 and confirmation GC column RTX-5. Data were therefore not qualified due to Continuing Calibration QC criteria.

(5) CALIBRATION (continued):

Continuing Calibration

PCB - The following compounds were qualified as estimated "J" because the Continuing Calibration %D for the Aroclor-1254 standard is between 15-90%:

Compound	Associated Sample(s)
Aroclor-1254	[1]

[1] Due to professional judgement associated non-detected "U" sample data were not qualified as estimated "J" even though associated continuing calibration Aroclor-1254 standards (runs 17, 28, and 35) exceeded (16%, 17%, and 24%, respectively) QC criteria ($\leq$ 15%). The laboratory indicated that the analytical instrument experienced an increase in response during the analyses due to a possible matrix effect. However, the change in instrument sensitivity did not effect the quantitation limits ($\leq$ 0.10 *u*g/sample) of the associated non-detected "U" sample data (STN1-PCB, STN2-PCB, STN3-PCB, STN4-PCB, LB-PCB-A, -B, -C, and Blind-PCB-C).

(6) SURROGATES/SYSTEM MONITORING COMPOUNDS (SMC):

All samples are spiked with surrogate/SMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate/SMC concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below. The following analytes for the samples shown were qualified because of surrogate/SMC recovery:

PCBs - Due to professional judgement, the following PCB compounds were either qualified as estimated "J" or rejected "R" in the associated sample data because recoveries of Dibutylchlorendate (DBC) are outside QC limits (20-150%):

Surrogate Recovery (%R)	Qualifier	Associated Sample(s)	Number of Compounds

DBC surrogate recoveries are within QC limits (20-150%), therefore sample data were not qualified based on surrogate recovery QC criteria.

Note: The laboratory indicated in the case narrative that pesticide spiking solution was accidentally added to all samples instead of PCB surrogate solution. Additional qualification of data was not required because the pesticide compounds do not interfere with the PCB pattern.

(9) MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The laboratory must perform three quality control (QC) blind spike analyses and three analytical spike analyses in order to ensure the QC of the calibration and desorption efficiency (DE) graphs generated during the initial calibration sequence. The percent recovery (%R) must fall within laboratory-specified QC criteria.

PCBs - The following sample data were either qualified as estimated "J" or rejected "R" due to exceeding duplicate spike recovery QC criteria:

Original Sample	Front Spike %R	Back Spike %R	Qualifier	Compound(s)
43059.01	93.0%	93.5%	[1]	
43060.01	92.0%	92.5%	[1]	
43061.01	94.5%	87.0%	[1]	

[1] The PCB-1242 percent spike recoveries (%R) of the front and back sections of the air tubes are within EANDE target QC limits (80-120%). PCB sample data were not qualified based on duplicate spike recoveries.

(10) Compound Identification

PCBs - The following detected compounds were qualified due to a percent difference (%D) between the primary and confirmation columns > 25%:

Compound	%D	Qualifier	Sample(s)

Sample data is non-detected "U", therefore data were not qualified based on this QC criteria.

PCBs - The laboratory indicated in the Case Narrative that the accuracy of the "analyses depends upon the representative nature of the sample and the reliability of collection procedures as well as the accuracy of the laboratory analysis of the sample as submitted". START personnel indicated that no problems were encountered during collection of investigative samples. START personnel collected 30 L per investigative sample at a flow rate of 0.1 L/min. This is within the method-specified collection of between 1 L to 50 L of air at a flow rate of 0.05 to 0.2 L/min.

PCBs - NIOSH Method No. 5503 provides gas chromatographic conditions for the detection of ug/mL levels of certain PCB compounds. The sensitivity of the method usually depends on the level of interferences rather than on instrumental limitations.

OTHER ANALYTES WORK TABLE

Project: Cornell Dubilier Electronics

START PM: PM NAME
(Unless Otherwise Indicated)

Sampling Date: 23 April 1996

SAMPLE #/CONCENTRATION ($\mu g/m^3$)

Polychlorinated Biphenyls Dilution Factor	Method Detection Limit [1]	Air 43068.01 STN1-PCB 1	Air 43069.01 STN2-PCB 1	Air 43070.01 STN3-PCB 1	Air 43071.01 STN4-PCB 1	
Aroclor-1016	3.3	U	U	U	U	
Aroclor-1221	3.3	U	U	U	U	
Aroclor-1232	3.3	U	U	U	U	
Aroclor-1242	3.3	U	U	U	U	
Aroclor-1248	3.3	U	U	U	U	
Aroclor-1254	3.3	U	U	U	U	
Aroclor-1260	3.3	U	U	U	U	

Polychlorinated Biphenyls Dilution Factor	Method Detection Limit	Air 43065.01 LB-PCB-A 1	Air 43066.01 LB-PCB-B 1	Air 43067.01 LB-PCB-C 1	Air 43062.01 Blind-PCB-A 1	Air 43063.01 Blind-PCB-B 1
Aroclor-1016	0.1 μg/tube	U	U	U	U	U
Aroclor-1221	0.1 μg/tube	U	U	U	U	U
Aroclor-1232	0.1 μg/tube	U	U	U	U	U
Aroclor-1242	0.1 μg/tube	U	U	U	U	U
Aroclor-1248	0.1 μg/tube	U	U	U	U	U
Aroclor-1254	0.1 μg/tube	U	U	U	U	U
Aroclor-1260	0.1 μg/tube	U	U	U	U	U

Polychlorinated Biphenyls Percent Solids Dilution Factor	Method Detection Limit	Air 43064.01 Blind-PCB-C 1				
Aroclor-1016	0.1 μg/tube	U				
Aroclor-1221	0.1 μg/tube	U				
Aroclor-1232	0.1 μg/tube	U				
Aroclor-1242	0.1 μg/tube	U				
Aroclor-1248	0.1 μg/tube	U				
Aroclor-1254	0.1 μg/tube	U				
Aroclor-1260	0.1 μg/tube	U				

[1] 0.1 μg/tube x 1000 L/m^3 ÷ 30 L (air volume sampled) = 3.3 $\mu g/m^3$

U - non-detected compound
B - detected in the corresponding method blank
J - estimated value
J - between the instrument detection limit (IDL) and the method detection limit (MDL)
JN - presumptive evidence of a compound at an estimated value
R - rejected compound

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SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W5-0019

START-02-F-00272

TRANSMITTAL MEMO

To: Nick Magriples, OSC
Removal Action Branch, U.S. EPA Region II

From: Dorothy M. Ponte and
Smita Sumbaly, Data Reviewers
Joseph Price, PM
START Region II

Subject: Cornell Dubilier Electronics Site
Data Validation Assessment

Date: 21 May 1996

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

TAL	8 samples
PCBs	4 investigative samples
	3 lot blank samples
	3 blind spike samples

- Matrices and Number of Samples

Air Filter + Solid Sorbent	10 samples
Air MCEF Filter	8 samples

- Sampling date: 23 April 1996

The final data assessment narrative and original analytical data package are attached.

cc: START PM Joseph Price
START FILE TDD #: 02-96-04-0003
TDD #: 02-96-04-0010
PCS #: 1316

ecology and environment, inc.
International Specialists in the Environment
ANALYTICAL SERVICES CENTER
4493 Walden Avenue
Lancaster, New York 14086
Tel. (716) 685-8080, Fax: (716) 685-0852

April 30, 1996

Ms. Smita Sumbaly
Roy F. Weston
1090 King Georges Post Road
Suite 201
Edison, New Jersey 08837

RE: 9600.789

Dear Ms. Sumbaly:

Attached is the laboratory report of the analyses conducted on samples received at the Analytical Services Center on April 24, 1996. Analyses were performed according to procedures set forth in NIOSH 5503 and 7300.

The chain of custody form provided herein is integral to this report and must be included with the analytical results forms upon transferral to another data user.

The accuracy of all analyses depends upon the representative nature of the sample and the reliability of collection procedures as well as the accuracy of the laboratory analysis of the sample as submitted. Ecology and Environment, Inc.'s activity and representations with respect to these samples are limited solely to the laboratory analysis of the samples presented to us.

All samples on which this report is based will be retained by E & E for a period of 30 days from the date of this report, unless otherwise instructed by the client. If additional storage of samples is requested by the client, a storage fee of $1.00 per sample container per month will be charged for each sample, with such charges accruing until destruction of the samples is authorized by the client.

CASE NARRATIVE

Desorption efficiency raw data is located on pages 8-13 of this data package.

METALS

Due to software limitations, E & E identification codes have been used throughout this report. Full client ID's can be found in the comment section on form 1.

The following calculation was used for the determination of arsenic and lead in air samples:

$$\frac{\text{ug}}{\text{Liter}} \times \frac{0.01\ \text{Liter}}{1\ \text{filter}} = \frac{\text{ug}}{\text{filter}}$$

The spike recoveries for samples MCEF-SA and MCEF-SB were calculated using the associated lot blanks as the original sample results (MCEF-LA and MCEF-LB respectively).

Lead was detected in the preparation blank at 0.256 ug/filter, just above the IDL of 0.21 ug/filter. Lead was also detected in all the samples. It is not possible to redigest and reanalyze filters.

PCB in Air

The following calculations were used for the determination of PCB's in air samples:

1. $$\text{Result}\ \frac{\text{ug}}{\text{tube}} = \frac{1.0\ \text{ml final volume}}{\text{tube}} \times \text{concentration}\ \frac{\text{ug}}{\text{ml}}$$

2. liters x (1 cubic meter / 1000 liters) = 1 cubic meter

$$\text{Result}\ \frac{\text{ug}}{\text{cubic meter}} = \text{concentration}\ \frac{\text{ug}}{\text{ml}} \times \frac{\text{1.0 ml final volume}}{\text{volume sampled (cubic meter)}}$$

Accidentally, pesticide spiking solution was added to all samples instead of PCB surrogate solution. The pesticide compounds do not interfere with the PCB pattern.

The extraction codes for the PCB in air analyses are as follows: 3200 = front end of tube, 3210 = back end of tube, 3220 = front end of spiked tube, 3290 = back end of spiked tube.

The continuing AROCLOR-1254 standards (runs 17, 28, & 35) exceeded the 15% difference criteria. Percent differences were 16%, 17%, and 24% respectively.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Gary Hahn - Manager
Analytical Services Center
April 30, 1996

Total number of pages in this data package is: 358.

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: 14 May 1996

TO: Nick Magriples, OSC
USEPA Region II

FROM: Dorothy M. Ponte
START Data Review Team

SUBJECT: QA/QC Compliance Review Summary

As requested quality control and performance measures for the data packages noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness	Blanks
Spectra Matching Quality	DFTPP and BFB Tuning
Surrogate Spikes	Chromatography
Matrix Spikes/Duplicates	Holding Times
Calibration	Compound ID (HSL, TIC)

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

	I Volatiles	II B/N/A	III Pesticide	IV Other
Acceptable as Submitted				
Acceptable with Comments			X	
Unacceptable, Action Pending				
Unacceptable				

Data Reviewed by: Dorothy M. Ponte Date:

Approved By: Joseph Soroka, Ph.D. Date: 5/28/96

Area Code/Phone No.: (908) 225-6116

NARRATIVE

CASE No. 1316

SITE NAME: Cornell Dubilier Electronics

South Plainfield, Middlesex County, New Jersey

Laboratory Name: Ecology and Environment, Inc. (EANDE)

INTRODUCTION:

The laboratory's portion of this Case consisted of 10 samples collected on 23 April 1996.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported No problems with the analyses of polychlorinated biphenyls in air media samples.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

Evaluation by Fraction

Pesticides/PCBs

Y Holding Times	Y Calibration Linearity
Y Instrument Performance	Y Blank
___ DDT RT/12 Minutes?	Y Surrogate Recovery
Y Retention Time Window	Y Spike Recovery
Y Analytical Sequence	Y Compound ID (HSL,TIC)
___ DDT/Endrin Degradation	Y Standards
Y RT Check for DBC	Y Chromatography

Comments:

1. Refer to Data Assessment Narrative

TOTAL REVIEW

DATA ASSESSMENT NARRATIVE

EANDE Project #: 9600.789 START RFP #s: 1316

SAMPLES: 10 Filter + Solid Sorbent Samples

LAB: Ecology and Environment, Inc. Lab ID: EANDE

SITE: Cornell Dubilier Electronics

Analysis: Target Compound List (TCL) - Polychlorinated Biphenyls (PCBs)

DATA ASSESSMENT:

The S.O.W. Document # OLM01.0 (Rev. 12/90) for evaluating organic data have been applied.

All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detects), "R" (unusable), or "JN" (presumptive evidence for the presence of the material at an estimated value). All action is detailed on the attached sheets.

Two facts should be noted by all data users. First, the "R" flag means that the associated data is unusable. In other words, due to significant QC problems, the analysis is invalid and provides no information on whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error.

Analytical data qualified as "JN" or "R" may not be used to demonstrate compliance with Toxicity Characteristic or Land Ban Regulations.

Reviewer's Signature: _____ Date: 05 / 17 /19 96

Verified By: _____ Date: ___/___/19__

A.2.2 Data Assessment (continued):

On 23 April 1996, the Region II Superfund Technical Assessment and Response Team (START) personnel collected four (4) investigative air tube (13-mm glass fiber filter plus Florisil solid sorbent) grab samples from the Cornell Dubilier Electronics site, South Plainfield, Middlesex County, New Jersey. Sample collection was performed at a calibrated flow rate of 0.1 liters per minute (L/min) for a period of 300 minutes providing a sample calculated air volume of 30 L. Of the four investigative samples, sample STN4-PCB was collected upwind (background). Within twenty-four hours of collection, investigative samples and QC samples (media blanks [3], blind spikes [3], analytical spikes [3], and desorption efficiency media blanks [15]) were shipped by Federal Express courier to Ecology and Environment, Inc. (EANDE), Analytical Services Center, Lancaster, New York. On 24 April 1996, samples were received at the laboratory. A representative of the laboratory verified that samples arrived intact, in a sealed shipping container, and with proper documentation. Samples were analyzed by the laboratory for Target Compound List (TCL) polychlorinated biphenyl (PCB) organic compounds in air (TO-10 PCB in Air) following procedures specified in NIOSH method number 5503 from the NIOSH Manual of Analytical Methods (NMAM), Fourth Edition, 15 August 1994.

Client identification (ID) and laboratory ID numbers are as follows:

Client ID No.	EANDE Sample ID No.	Matrix
STN1-PCB	43068.01	Air Filter + Florisil Sorbent
STN2-PCB	43069.01	Air Filter + Florisil Sorbent
STN3-PCB	43070.01	Air Filter + Florisil Sorbent
STN4-PCB	43071.01	Air Filter + Florisil Sorbent
LB-PCB-A	43065.01	Air Filter + Florisil Sorbent
LB-PCB-B	43066.01	Air Filter + Florisil Sorbent
LB-PCB-C	43067.01	Air Filter + Florisil Sorbent
Blind-PCB-A	43062.01	Air Filter + Florisil Sorbent
Blind-PCB-B	43063.01	Air Filter + Florisil Sorbent
Blind-PCB-C	43064.01	Air Filter + Florisil Sorbent

1. HOLDING TIMES:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following analytes in the samples shown were qualified because of holding time:

PCBs - Holding time requirements, as specified in NIOSH Method No. 5503 for polychlorobiphenyls (PCBs), were met by the laboratory. Reported sample stability for the solid sorbent Florisil tubes is 2 months. The sample stability is unknown for the 13-mm glass fiber filter cassette. However, air filter samples were analyzed within twenty-four hours after the validated time of sample receipt (VTSR) at the laboratory.

(2) BLANK CONTAMINATION:

Quality Assurance (QA) blanks, i.e., method, trip, field, rinse and water blanks are prepared to identify any contamination that may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following in the samples shown were qualified with "U" for these reasons:

A) Method Blank Contamination

PCBs - The following compounds were qualified as non-detected "U" in the associated samples due to method (lot) blank contamination:

Compound	Associated Samples

PCB compounds were not detected by the laboratory in the associated lot blank samples (Florisil Tube SKC Lot No. 377; Filter SKC Lot No. 9494). Therefore, data were not qualified based on method blank contamination.

B) Field or Rinse Blank Contamination

PCBs - The following compounds were qualified as non-detected "U" in the associated samples due to field blank contamination:

Compound	Associated Samples

Field blank samples were not collected for PCB analyses (2-10 field blanks are required by the method per set). Data were therefore not qualified due to field blank contamination. Additionally, the PCB investigative sample data is non-detected "U".

(5) CALIBRATION:

B. PERCENT RELATIVE STANDARD DEVIATION (%RSD) AND PERCENT DIFFERENCE (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 20% and %D must be < 20%. A value outside of these QC limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ" (if %D or RSD > 40%). If there is a gross deviation of %RSD and %D, the non-detects may be rejected ("R").

Initial Calibration

PCB - Positive values of the following compounds were qualified as estimated "J" in the associated samples because the Initial Calibration %RSD is between 20-90% when the mean RRF is > 0.05):

Compound	Associated Sample(s)

Initial calibration %RSD and mean RRF values did not exceed specified QC criteria for primary GC column RTX-35 and confirmation GC column RTX-5. Data were therefore not qualified due to Initial Calibration QC criteria.

Continuing Calibration

PCB - The following compounds were qualified as estimated "J" because the Continuing Calibration %D is between 20-90% when the 0.4 *u*g/mL RRF is > 0.05:

Compound	Associated Sample(s)

Continuing calibration %D and 0.4 *u*g/mL RRF values did not exceed specified QC criteria for primary GC column RTX-35 and confirmation GC column RTX-5. Data were therefore not qualified due to Continuing Calibration QC criteria.

(5) CALIBRATION (continued):

Continuing Calibration

PCB - The following compounds were qualified as estimated "J" because the Continuing Calibration %D for the Aroclor-1254 standard is between 15-90%:

Compound	Associated Sample(s)
Aroclor-1254	[1]

[1] Due to professional judgement associated non-detected "U" sample data were not qualified as estimated "J" even though associated continuing calibration Aroclor-1254 standards (runs 17, 28, and 35) exceeded (16%, 17%, and 24%, respectively) QC criteria ($\leq$ 15%). The laboratory indicated that the analytical instrument experienced an increase in response during the analyses due to a possible matrix effect. However, the change in instrument sensitivity did not effect the quantitation limits ($\leq$ 0.10 *u*g/sample) of the associated non-detected "U" sample data (STN1-PCB, STN2-PCB, STN3-PCB, STN4-PCB, LB-PCB-A, -B, -C, and Blind-PCB-C).

(6) SURROGATES/SYSTEM MONITORING COMPOUNDS (SMC):

All samples are spiked with surrogate/SMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate/SMC concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below. The following analytes for the samples shown were qualified because of surrogate/SMC recovery:

PCBs - Due to professional judgement, the following PCB compounds were either qualified as estimated "J" or rejected "R" in the associated sample data because recoveries of Dibutylchlorendate (DBC) are outside QC limits (20-150%):

Surrogate Recovery (%R)	Qualifier	Associated Sample(s)	Number of Compounds

DBC surrogate recoveries are within QC limits (20-150%), therefore sample data were not qualified based on surrogate recovery QC criteria.

Note: The laboratory indicated in the case narrative that pesticide spiking solution was accidentally added to all samples instead of PCB surrogate solution. Additional qualification of data was not required because the pesticide compounds do not interfere with the PCB pattern.

(9) MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The laboratory must perform three quality control (QC) blind spike analyses and three analytical spike analyses in order to ensure the QC of the calibration and desorption efficiency (DE) graphs generated during the initial calibration sequence. The percent recovery (%R) must fall within laboratory-specified QC criteria.

PCBs - The following sample data were either qualified as estimated "J" or rejected "R" due to exceeding duplicate spike recovery QC criteria:

Original Sample	Front Spike %R	Back Spike %R	Qualifier	Compound(s)
43059.01	93.0%	93.5%	[1]	
43060.01	92.0%	92.5%	[1]	
43061.01	94.5%	87.0%	[1]	

[1] The PCB-1242 percent spike recoveries (%R) of the front and back sections of the air tubes are within EANDE target QC limits (80-120%). PCB sample data were not qualified based on duplicate spike recoveries.

(10) Compound Identification

PCBs - The following detected compounds were qualified due to a percent difference (%D) between the primary and confirmation columns > 25%:

Compound	%D	Qualifier	Sample(s)

Sample data is non-detected "U", therefore data were not qualified based on this QC criteria.

PCBs - The laboratory indicated in the Case Narrative that the accuracy of the "analyses depends upon the representative nature of the sample and the reliability of collection procedures as well as the accuracy of the laboratory analysis of the sample as submitted". START personnel indicated that no problems were encountered during collection of investigative samples. START personnel collected 30 L per investigative sample at a flow rate of 0.1 L/min. This is within the method-specified collection of between 1 L to 50 L of air at a flow rate of 0.05 to 0.2 L/min.

PCBs - NIOSH Method No. 5503 provides gas chromatographic conditions for the detection of ug/mL levels of certain PCB compounds. The sensitivity of the method usually depends on the level of interferences rather than on instrumental limitations.

OTHER ANALYTES WORK TABLE

Project: Cornell Dubilier Electronics

START PM: PM NAME
(Unless Otherwise Indicated)

Sampling Date: 23 April 1996

SAMPLE #/CONCENTRATION ($\mu g/m^3$)

Polychlorinated Biphenyls	Method Detection Limit [1]	Air 43068.01 STN1-PCB	Air 43069.01 STN2-PCB	Air 43070.01 STN3-PCB	Air 43071.01 STN4-PCB	
Dilution Factor		1	1	1	1	
Aroclor-1016	3.3	U	U	U	U	
Aroclor-1221	3.3	U	U	U	U	
Aroclor-1232	3.3	U	U	U	U	
Aroclor-1242	3.3	U	U	U	U	
Aroclor-1248	3.3	U	U	U	U	
Aroclor-1254	3.3	U	U	U	U	
Aroclor-1260	3.3	U	U	U	U	

Polychlorinated Biphenyls	Method Detection Limit	Air 43065.01 LB-PCB-A	Air 43066.01 LB-PCB-B	Air 43067.01 LB-PCB-C	Air 43062.01 Blind-PCB-A	Air 43063.01 Blind-PCB-B
Dilution Factor		1	1	1	1	1
Aroclor-1016	0.1 μg/tube	U	U	U	U	U
Aroclor-1221	0.1 μg/tube	U	U	U	U	U
Aroclor-1232	0.1 μg/tube	U	U	U	U	U
Aroclor-1242	0.1 μg/tube	U	U	U	U	U
Aroclor-1248	0.1 μg/tube	U	U	U	U	U
Aroclor-1254	0.1 μg/tube	U	U	U	U	U
Aroclor-1260	0.1 μg/tube	U	U	U	U	U

Polychlorinated Biphenyls	Method Detection Limit	Air 43064.01 Blind-PCB-C				
Percent Solids Dilution Factor		1				
Aroclor-1016	0.1 μg/tube	U				
Aroclor-1221	0.1 μg/tube	U				
Aroclor-1232	0.1 μg/tube	U				
Aroclor-1242	0.1 μg/tube	U				
Aroclor-1248	0.1 μg/tube	U				
Aroclor-1254	0.1 μg/tube	U				
Aroclor-1260	0.1 μg/tube	U				

[1] 0.1 μg/tube x 1000 L/m^3 ÷ 30 L (air volume sampled) = 3.3 $\mu g/m^3$

U – non-detected compound
B – detected in the corresponding method blank
J – estimated value
J – between the instrument detection limit (IDL) and the method detection limit (MDL)
JN – presumptive evidence of a compound at an estimated value
R – rejected compound

JOB NUMBER : 9600.789

Ecology and Environment, Inc.
SAMPLE TRACKING REPORT

SAMPLE NUMBER	CLIENT SAMPLE ID	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED
TO-10 PCB IN AIR	-AIR			
43062.01	BLIND-PCB-A	04/23/96	04/25/96	04/26/96
43063.01	BLIND-PCB-B	04/23/96	04/25/96	04/26/96
43064.01	BLIND-PCB-C	04/23/96	04/25/96	04/26/96
43065.01	LB-PCB-A	04/23/96	04/25/96	04/26/96
43066.01	LB-PCB-B	04/23/96	04/25/96	04/26/96
43067.01	LB-PCB-C	04/23/96	04/25/96	04/26/96
43068.01	STN1-PCB	04/23/96	04/25/96	04/26/96
43069.01	STN2-PCB	04/23/96	04/25/96	04/26/96
43070.01	STN3-PCB	04/23/96	04/25/96	04/26/96
43071.01	STN4-PCB	04/23/96	04/25/96	04/26/96

TEST CODE :APCB 1 JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR UNITS : UG/M3
SAMPLE ID LAB : EE-96-43068 MATRIX: AIR
SAMPLE ID CLIENT: STN1-PCB

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		3.3
PCB-1254	ND		3.3
PCB-1221	ND		3.3
PCB-1232	ND		3.3
PCB-1248	ND		3.3
PCB-1260	ND		3.3
PCB-1016	ND		3.3

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43069
SAMPLE ID CLIENT: STN2-PCB

UNITS : UG/M3
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		3.3
PCB-1254	ND		3.3
PCB-1221	ND		3.3
PCB-1232	ND		3.3
PCB-1248	ND		3.3
PCB-1260	ND		3.3
PCB-1016	ND		3.3

QUALIFIERS: C = COMMENT
J = ESTIMATED VALUE
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE

ND = NOT DETECTED
B = ALSO PRESENT IN BLANK

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43070
SAMPLE ID CLIENT: STN3-PCB

UNITS : UG/M3
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		3.3
PCB-1254	ND		3.3
PCB-1221	ND		3.3
PCB-1232	ND		3.3
PCB-1248	ND		3.3
PCB-1260	ND		3.3
PCB-1016	ND		3.3

QUALIFIERS: C = COMMENT
J = ESTIMATED VALUE
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE

ND = NOT DETECTED
B = ALSO PRESENT IN BLANK

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43071
SAMPLE ID CLIENT: STN4-PCB

UNITS : UG/M3
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		3.3
PCB-1254	ND		3.3
PCB-1221	ND		3.3
PCB-1232	ND		3.3
PCB-1248	ND		3.3
PCB-1260	ND		3.3
PCB-1016	ND		3.3

QUALIFIERS: C = COMMENT
J = ESTIMATED VALUE
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE

ND = NOT DETECTED
B = ALSO PRESENT IN BLANK

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43065
SAMPLE ID CLIENT: LB-PCB-A

UNITS : UG/TUBE
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		0.10
PCB-1254	ND		0.10
PCB-1221	ND		0.10
PCB-1232	ND		0.10
PCB-1248	ND		0.10
PCB-1260	ND		0.10
PCB-1016	ND		0.10

QUALIFIERS: C = COMMENT
J = ESTIMATED VALUE
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE

ND = NOT DETECTED
B = ALSO PRESENT IN BLANK

TEST CODE :APCB 1 JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR UNITS : UG/TUBE
SAMPLE ID LAB : EE-96-43066 MATRIX: AIR
SAMPLE ID CLIENT: LB-PCB-B

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		0.10
PCB-1254	ND		0.10
PCB-1221	ND		0.10
PCB-1232	ND		0.10
PCB-1248	ND		0.10
PCB-1260	ND		0.10
PCB-1016	ND		0.10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43067
SAMPLE ID CLIENT: LB-PCB-C

UNITS : UG/TUBE
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		0.10
PCB-1254	ND		0.10
PCB-1221	ND		0.10
PCB-1232	ND		0.10
PCB-1248	ND		0.10
PCB-1260	ND		0.10
PCB-1016	ND		0.10

QUALIFIERS: C = COMMENT
ND = NOT DETECTED
J = ESTIMATED VALUE
B = ALSO PRESENT IN BLANK
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43062
SAMPLE ID CLIENT: BLIND-PCB-A

UNITS : UG/TUBE
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		0.10
PCB-1254	ND		0.10
PCB-1221	ND		0.10
PCB-1232	ND		0.10
PCB-1248	ND		0.10
PCB-1260	ND		0.10
PCB-1016	ND		0.10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43063
SAMPLE ID CLIENT: BLIND-PCB-B

UNITS : UG/TUBE
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		0.10
PCB-1254	ND		0.10
PCB-1221	ND		0.10
PCB-1232	ND		0.10
PCB-1248	ND		0.10
PCB-1260	ND		0.10
PCB-1016	ND		0.10

QUALIFIERS: C = COMMENT
J = ESTIMATED VALUE
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE

ND = NOT DETECTED
B = ALSO PRESENT IN BLANK

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43064
SAMPLE ID CLIENT: BLIND-PCB-C

UNITS : UG/TUBE
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		0.10
PCB-1254	ND		0.10
PCB-1221	ND		0.10
PCB-1232	ND		0.10
PCB-1248	ND		0.10
PCB-1260	ND		0.10
PCB-1016	ND		0.10

QUALIFIERS: C = COMMENT
J = ESTIMATED VALUE
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE

ND = NOT DETECTED
B = ALSO PRESENT IN BLANK

CHAIN OF CUSTODY RECORD

ENVIRONMENTAL PROTECTION AGENCY – REGION II
Environmental Services Division
EDISON, NEW JERSEY 08817

RECEIVED 1996

Name of Unit and Address: ROY F. WESTON - START
1090 KING GEORGES POST Rd
SUITE 201 EDISON NJ 08837 (908) 225-6116

RFP#: 1316

* ALL SAMPLES BELOW FOR ANALYSIS PER NIOSH 5503
** SAMPLES ENTAIL BOTH A FLORISIL TUBE + A 13mm GLASS FIBER FILTER

Sample Number	Number of Containers	Description of Samples
LB-PCB (A,B,C)	3 SETS	3 LOT BLANKS - NIOSH 5503 VOLUME = 0 SKC LOT 377 FLORISIL TUBES || FILTER LOT = SKC 9494
BLND-PCB (A,B,C)	3 SETS	3 BLIND SPIKES - NIOSH 5503 VOLUME = 0
ANAL-PCB (A,B,C)	3 SETS	3 ANALYTICAL SPIKES - NIOSH 5503 VOLUME = 0
DE-PCB (A-O)	15 SETS	15 DESORPTION EFFICIENCY SAMPLES - NIOSH 5503 VOLUME = 0
STN1-PCB	1 SET	STATION 1 PCB VOL = 30 l
STN2-PCB	1 SET	STATION 2 PCB VOL = 30 l
STN3-PCB	1 SET	STATION 3 PCB VOL = 30 l
STN4-PCB	1 SET	STATION 4 PCB VOL = 30 l

Person Assuming Responsibility for Sample: [signature] Time: 5:30 pm Date: 4/23/96

Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody
ALL	[signature]				
	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody
	Fed Ex	[illegible]	0930	4-24-96	Analysis
	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody
	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody

Roy F. Weston, Inc.
Federal Programs Division
Suite 201
1090 King Georges Post Road
Edison, New Jersey 08837-3703
908-225-6116 • Fax 908-225-7037

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W5-0019

START-02-F-00272

TRANSMITTAL MEMO

To: Nick Magriples, OSC
Removal Action Branch, U.S. EPA Region II

From: Dorothy M. Ponte and
Smita Sumbaly, Data Reviewers
Joseph Price, PM
START Region II

Subject: Cornell Dubilier Electronics Site
Data Validation Assessment

Date: 21 May 1996

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

TAL	8 samples
PCBs	4 investigative samples
	3 lot blank samples
	3 blind spike samples

- Matrices and Number of Samples

Air Filter + Solid Sorbent	10 samples
Air MCEF Filter	8 samples

- Sampling date: 23 April 1996

The final data assessment narrative and original analytical data package are attached.

cc: START PM Joseph Price
START FILE TDD #: 02-96-04-0003
TDD #: 02-96-04-0010
PCS #: 1316

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: 14 May 1996

TO: Nick Magriples, OSC
USEPA Region II

FROM: Dorothy M. Ponte
START Data Review Team

SUBJECT: QA/QC Compliance Review Summary

As requested quality control and performance measures for the data packages noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness	Blanks
Spectra Matching Quality	DFTPP and BFB Tuning
Surrogate Spikes	Chromatography
Matrix Spikes/Duplicates	Holding Times
Calibration	Compound ID (HSL, TIC)

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

	I Volatiles	II B/N/A	III Pesticide	IV Other
Acceptable as Submitted				
Acceptable with Comments			X	
Unacceptable, Action Pending				
Unacceptable				

Data Reviewed by: Dorothy M. Ponte Date: _____

Approved By: Joseph Soroka, Ph.D. Date: 5/20/96

Area Code/Phone No.: (908) 225-6116

NARRATIVE

CASE No. 1316

SITE NAME: Cornell Dubilier Electronics

South Plainfield, Middlesex County, New Jersey

Laboratory Name: Ecology and Environment, Inc. (EANDE)

INTRODUCTION:

The laboratory's portion of this Case consisted of 10 samples collected on 23 April 1996.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported No problems with the analyses of polychlorinated biphenyls in air media samples.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

Evaluation by Fraction

Pesticides/PCBs

_Y_ Holding Times	_Y_ Calibration Linearity
_Y_ Instrument Performance	_Y_ Blank
___ DDT RT/12 Minutes?	_Y_ Surrogate Recovery
_Y_ Retention Time Window	_Y_ Spike Recovery
_Y_ Analytical Sequence	_Y_ Compound ID (HSL,TIC)
___ DDT/Endrin Degradation	_Y_ Standards
_Y_ RT Check for DBC	_Y_ Chromatography

Comments:

1. Refer to Data Assessment Narrative

TOTAL REVIEW

DATA ASSESSMENT NARRATIVE

EANDE Project #: 9600.789 START RFP #s: 1316

SAMPLES: 10 Filter + Solid Sorbent Samples

LAB: Ecology and Environment, Inc. Lab ID: EANDE

SITE: Cornell Dubilier Electronics

Analysis: Target Compound List (TCL) - Polychlorinated Biphenyls (PCBs)

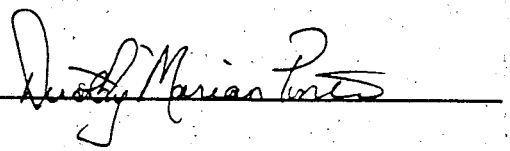
DATA ASSESSMENT:

The S.O.W. Document # OLM01.0 (Rev. 12/90) for evaluating organic data have been applied.

All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detects), "R" (unusable), or "JN" (presumptive evidence for the presence of the material at an estimated value). All action is detailed on the attached sheets.

Two facts should be noted by all data users. First, the "R" flag means that the associated data is unusable. In other words, due to significant QC problems, the analysis is invalid and provides no information on whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error.

Analytical data qualified as "JN" or "R" may not be used to demonstrate compliance with Toxicity Characteristic or Land Ban Regulations.

Reviewer's Signature:  Date: 05 / 17 /19 96

Verified By: _____ Date: ___/___/19__

A.2.2 Data Assessment (continued):

On 23 April 1996, the Region II Superfund Technical Assessment and Response Team (START) personnel collected four (4) investigative air tube (13-mm glass fiber filter plus Florisil solid sorbent) grab samples from the Cornell Dubilier Electronics site, South Plainfield, Middlesex County, New Jersey. Sample collection was performed at a calibrated flow rate of 0.1 liters per minute (L/min) for a period of 300 minutes providing a sample calculated air volume of 30 L. Of the four investigative samples, sample STN4-PCB was collected upwind (background). Within twenty-four hours of collection, investigative samples and QC samples (media blanks [3], blind spikes [3], analytical spikes [3], and desorption efficiency media blanks [15]) were shipped by Federal Express courier to Ecology and Environment, Inc. (EANDE), Analytical Services Center, Lancaster, New York. On 24 April 1996, samples were received at the laboratory. A representative of the laboratory verified that samples arrived intact, in a sealed shipping container, and with proper documentation. Samples were analyzed by the laboratory for Target Compound List (TCL) polychlorinated biphenyl (PCB) organic compounds in air (TO-10 PCB in Air) following procedures specified in NIOSH method number 5503 from the NIOSH Manual of Analytical Methods (NMAM), Fourth Edition, 15 August 1994.

Client identification (ID) and laboratory ID numbers are as follows:

Client ID No.	EANDE Sample ID No.	Matrix
STN1-PCB	43068.01	Air Filter + Florisil Sorbent
STN2-PCB	43069.01	Air Filter + Florisil Sorbent
STN3-PCB	43070.01	Air Filter + Florisil Sorbent
STN4-PCB	43071.01	Air Filter + Florisil Sorbent
LB-PCB-A	43065.01	Air Filter + Florisil Sorbent
LB-PCB-B	43066.01	Air Filter + Florisil Sorbent
LB-PCB-C	43067.01	Air Filter + Florisil Sorbent
Blind-PCB-A	43062.01	Air Filter + Florisil Sorbent
Blind-PCB-B	43063.01	Air Filter + Florisil Sorbent
Blind-PCB-C	43064.01	Air Filter + Florisil Sorbent

1. HOLDING TIMES:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following analytes in the samples shown were qualified because of holding time:

PCBs - Holding time requirements, as specified in NIOSH Method No. 5503 for polychlorobiphenyls (PCBs), were met by the laboratory. Reported sample stability for the solid sorbent Florisil tubes is 2 months. The sample stability is unknown for the 13-mm glass fiber filter cassette. However, air filter samples were analyzed within twenty-four hours after the validated time of sample receipt (VTSR) at the laboratory.

(2) BLANK CONTAMINATION:

Quality Assurance (QA) blanks, i.e., method, trip, field, rinse and water blanks are prepared to identify any contamination that may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following in the samples shown were qualified with "U" for these reasons:

A) Method Blank Contamination

PCBs - The following compounds were qualified as non-detected "U" in the associated samples due to method (lot) blank contamination:

Compound	Associated Samples

PCB compounds were not detected by the laboratory in the associated lot blank samples (Florisil Tube SKC Lot No. 377; Filter SKC Lot No. 9494). Therefore, data were not qualified based on method blank contamination.

B) Field or Rinse Blank Contamination

PCBs - The following compounds were qualified as non-detected "U" in the associated samples due to field blank contamination:

Compound	Associated Samples

Field blank samples were not collected for PCB analyses (2-10 field blanks are required by the method per set). Data were therefore not qualified due to field blank contamination. Additionally, the PCB investigative sample data is non-detected "U".

(5) CALIBRATION:

B. PERCENT RELATIVE STANDARD DEVIATION (%RSD) AND PERCENT DIFFERENCE (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 20% and %D must be < 20%. A value outside of these QC limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ" (if %D or RSD > 40%). If there is a gross deviation of %RSD and %D, the non-detects may be rejected ("R").

Initial Calibration

PCB - Positive values of the following compounds were qualified as estimated "J" in the associated samples because the Initial Calibration %RSD is between 20-90% when the mean RRF is > 0.05):

Compound	Associated Sample(s)

Initial calibration %RSD and mean RRF values did not exceed specified QC criteria for primary GC column RTX-35 and confirmation GC column RTX-5. Data were therefore not qualified due to Initial Calibration QC criteria.

Continuing Calibration

PCB - The following compounds were qualified as estimated "J" because the Continuing Calibration %D is between 20-90% when the 0.4 *u*g/mL RRF is > 0.05:

Compound	Associated Sample(s)

Continuing calibration %D and 0.4 *u*g/mL RRF values did not exceed specified QC criteria for primary GC column RTX-35 and confirmation GC column RTX-5. Data were therefore not qualified due to Continuing Calibration QC criteria.

(5) CALIBRATION (continued):

Continuing Calibration

PCB - The following compounds were qualified as estimated "J" because the Continuing Calibration %D for the Aroclor-1254 standard is between 15-90%:

Compound	Associated Sample(s)
Aroclor-1254	[1]

[1] Due to professional judgement associated non-detected "U" sample data were not qualified as estimated "J" even though associated continuing calibration Aroclor-1254 standards (runs 17, 28, and 35) exceeded (16%, 17%, and 24%, respectively) QC criteria ($\leq$ 15%). The laboratory indicated that the analytical instrument experienced an increase in response during the analyses due to a possible matrix effect. However, the change in instrument sensitivity did not effect the quantitation limits ($\leq$ 0.10 *u*g/sample) of the associated non-detected "U" sample data (STN1-PCB, STN2-PCB, STN3-PCB, STN4-PCB, LB-PCB-A, -B, -C, and Blind-PCB-C).

(6) SURROGATES/SYSTEM MONITORING COMPOUNDS (SMC):

All samples are spiked with surrogate/SMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate/SMC concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below. The following analytes for the samples shown were qualified because of surrogate/SMC recovery:

PCBs - Due to professional judgement, the following PCB compounds were either qualified as estimated "J" or rejected "R" in the associated sample data because recoveries of Dibutylchlorendate (DBC) are outside QC limits (20-150%):

Surrogate Recovery (%R)	Qualifier	Associated Sample(s)	Number of Compounds

DBC surrogate recoveries are within QC limits (20-150%), therefore sample data were not qualified based on surrogate recovery QC criteria.

Note: The laboratory indicated in the case narrative that pesticide spiking solution was accidentally added to all samples instead of PCB surrogate solution. Additional qualification of data was not required because the pesticide compounds do not interfere with the PCB pattern.

(9) MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The laboratory must perform three quality control (QC) blind spike analyses and three analytical spike analyses in order to ensure the QC of the calibration and desorption efficiency (DE) graphs generated during the initial calibration sequence. The percent recovery (%R) must fall within laboratory-specified QC criteria.

PCBs - The following sample data were either qualified as estimated "J" or rejected "R" due to exceeding duplicate spike recovery QC criteria:

Original Sample	Front Spike %R	Back Spike %R	Qualifier	Compound(s)
43059.01	93.0%	93.5%	[1]	
43060.01	92.0%	92.5%	[1]	
43061.01	94.5%	87.0%	[1]	

[1] The PCB-1242 percent spike recoveries (%R) of the front and back sections of the air tubes are within EANDE target QC limits (80-120%). PCB sample data were not qualified based on duplicate spike recoveries.

(10) Compound Identification

PCBs - The following detected compounds were qualified due to a percent difference (%D) between the primary and confirmation columns > 25%:

Compound	%D	Qualifier	Sample(s)

Sample data is non-detected "U", therefore data were not qualified based on this QC criteria.

PCBs - The laboratory indicated in the Case Narrative that the accuracy of the "analyses depends upon the representative nature of the sample and the reliability of collection procedures as well as the accuracy of the laboratory analysis of the sample as submitted". START personnel indicated that no problems were encountered during collection of investigative samples. START personnel collected 30 L per investigative sample at a flow rate of 0.1 L/min. This is within the method-specified collection of between 1 L to 50 L of air at a flow rate of 0.05 to 0.2 L/min.

PCBs - NIOSH Method No. 5503 provides gas chromatographic conditions for the detection of ug/mL levels of certain PCB compounds. The sensitivity of the method usually depends on the level of interferences rather than on instrumental limitations.

OTHER ANALYTES WORK TABLE

Project: Cornell Dubilier Electronics

START PM: PM NAME
(Unless Otherwise Indicated)

Sampling Date: 23 April 1996

SAMPLE #/CONCENTRATION ($\mu g/m^3$)

Polychlorinated Biphenyls Dilution Factor	Method Detection Limit [1]	Air 43068.01 STN1-PCB 1	Air 43069.01 STN2-PCB 1	Air 43070.01 STN3-PCB 1	Air 43071.01 STN4-PCB 1	
Aroclor-1016	3.3	U	U	U	U	
Aroclor-1221	3.3	U	U	U	U	
Aroclor-1232	3.3	U	U	U	U	
Aroclor-1242	3.3	U	U	U	U	
Aroclor-1248	3.3	U	U	U	U	
Aroclor-1254	3.3	U	U	U	U	
Aroclor-1260	3.3	U	U	U	U	

Polychlorinated Biphenyls Dilution Factor	Method Detection Limit	Air 43065.01 LB-PCB-A 1	Air 43066.01 LB-PCB-B 1	Air 43067.01 LB-PCB-C 1	Air 43062.01 Blind-PCB-A 1	Air 43063.01 Blind-PCB-B 1
Aroclor-1016	0.1 μg/tube	U	U	U	U	U
Aroclor-1221	0.1 μg/tube	U	U	U	U	U
Aroclor-1232	0.1 μg/tube	U	U	U	U	U
Aroclor-1242	0.1 μg/tube	U	U	U	U	U
Aroclor-1248	0.1 μg/tube	U	U	U	U	U
Aroclor-1254	0.1 μg/tube	U	U	U	U	U
Aroclor-1260	0.1 μg/tube	U	U	U	U	U

Polychlorinated Biphenyls Percent Solids Dilution Factor	Method Detection Limit	Air 43064.01 Blind-PCB-C 1				
Aroclor-1016	0.1 μg/tube	U				
Aroclor-1221	0.1 μg/tube	U				
Aroclor-1232	0.1 μg/tube	U				
Aroclor-1242	0.1 μg/tube	U				
Aroclor-1248	0.1 μg/tube	U				
Aroclor-1254	0.1 μg/tube	U				
Aroclor-1260	0.1 μg/tube	U				

[1] 0.1 μg/tube x 1000 L/m^3 ÷ 30 L (air volume sampled) = 3.3 $\mu g/m^3$

U – non-detected compound
B – detected in the corresponding method blank
J – estimated value
J – between the instrument detection limit (IDL) and the method detection limit (MDL)
JN – presumptive evidence of a compound at an estimated value
R – rejected compound

ecology and environment, inc.
International Specialists in the Environment
ANALYTICAL SERVICES CENTER
4493 Walden Avenue
Lancaster, New York 14086
Tel. (716) 685-8080, Fax: (716) 685-0852

April 30, 1996

Ms. Smita Sumbaly
Roy F. Weston
1090 King Georges Post Road
Suite 201
Edison, New Jersey 08837

RE: 9600.789

Dear Ms. Sumbaly:

Attached is the laboratory report of the analyses conducted on samples received at the Analytical Services Center on April 24, 1996. Analyses were performed according to procedures set forth in NIOSH 5503 and 7300.

The chain of custody form provided herein is integral to this report and must be included with the analytical results forms upon transferral to another data user.

The accuracy of all analyses depends upon the representative nature of the sample and the reliability of collection procedures as well as the accuracy of the laboratory analysis of the sample as submitted. Ecology and Environment, Inc.'s activity and representations with respect to these samples are limited solely to the laboratory analysis of the samples presented to us.

All samples on which this report is based will be retained by E & E for a period of 30 days from the date of this report, unless otherwise instructed by the client. If additional storage of samples is requested by the client, a storage fee of $1.00 per sample container per month will be charged for each sample, with such charges accruing until destruction of the samples is authorized by the client.

CASE NARRATIVE

Desorption efficiency raw data is located on pages 8-13 of this data package.

METALS

Due to software limitations, E & E identification codes have been used throughout this report. Full client ID's can be found in the comment section on form 1.

The following calculation was used for the determination of arsenic and lead in air samples:

$$\frac{\text{ug}}{\text{Liter}} \times \frac{0.01\ \text{Liter}}{1\ \text{filter}} = \frac{\text{ug}}{\text{filter}}$$

The spike recoveries for samples MCEF-SA and MCEF-SB were calculated using the associated lot blanks as the original sample results (MCEF-LA and MCEF-LB respectively).

Lead was detected in the preparation blank at 0.256 ug/filter, just above the IDL of 0.21 ug/filter. Lead was also detected in all the samples. It is not possible to redigest and reanalyze filters.

PCB in Air

The following calculations were used for the determination of PCB's in air samples:

1. $$\text{Result}\ \frac{\text{ug}}{\text{tube}} = \frac{1.0\ \text{ml final volume}}{\text{tube}} \times \text{concentration}\ \frac{\text{ug}}{\text{ml}}$$

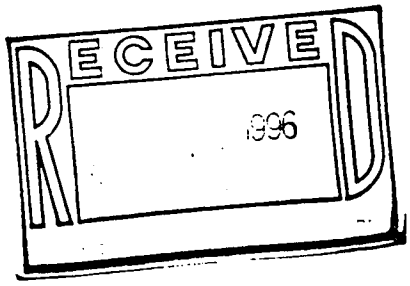
2. $$\text{liters} \times (1\ \text{cubic meter} / 1000\ \text{liters}) = 1\ \text{cubic meter}$$

$$\text{Result}\ \frac{\text{ug}}{\text{cubic meter}} = \text{concentration}\ \frac{\text{ug}}{\text{ml}} \times \frac{1.0\ \text{ml final volume}}{\text{volume sampled (cubic meter)}}$$

Accidentally, pesticide spiking solution was added to all samples instead of PCB surrogate solution. The pesticide compounds do not interfere with the PCB pattern.

The extraction codes for the PCB in air analyses are as follows: 3200 = front end of tube, 3210 = back end of tube, 3220 = front end of spiked tube, 3290 = back end of spiked tube.

The continuing AROCLOR-1254 standards (runs 17, 28, & 35) exceeded the 15% difference criteria. Percent differences were 16%, 17%, and 24% respectively.

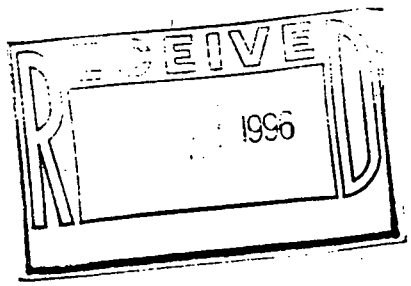


I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Gary Hahn - Manager
Analytical Services Center
April 30, 1996

Total number of pages in this data package is: 358 .

CHAIN OF CUSTODY RECORD



ENVIRONMENTAL PROTECTION AGENCY – REGION II
Environmental Services Division
EDISON, NEW JERSEY 08817

Name of Unit and Address: ROY F. WESTON - START
1090 King Georges Post Rd
Suite 201 Edison NJ 08837
(908) 225-6116

RFP#: 1316

+ ALL SAMPLES BELOW FOR ANALYSIS PER NIOSH 5503
** SAMPLES ENTAIL BOTH A FLORISIL TUBE + A 13mm GLASS FIBER FILTER

Sample Number	Number of Containers	Description of Samples
LB-PCB (A,B,C	3 SETS	3 LOT BLANKS - NIOSH 5503 VOLUME = 0 SKC LOT 377 FLORISIL TUBES || FILTER LOT = SKC 9494
BLND PCB (A,B,C)	3 SETS	3 BLIND SPIKES - NIOSH 5503 VOLUME = 0
ANAL-PCB (A,B,C)	3 SETS	3 ANALYTICAL SPIKES - NIOSH 5503 VOLUME = 0
DE-PCB (A-O)	15 SETS	15 DESORPTION EFFICIENCY SAMPLES - NIOSH 5503 VOLUME = 0
STN1-PCB	1 SET	STATION 1 PCB VOL = 30 l
STN2-PCB	1 SET	STATION 2 PCB VOL = 30 l
STN3-PCB	1 SET	STATION 3 PCB VOL = 30 l
STN4-PCB	1 SET	STATION 4 PCB VOL = 30 l

Person Assuming Responsibility for Sample: [signature] Time: 5:30 pm Date: 4/23/96

Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody
ALL	[signature]				
	Fed Ex	[signature]	0930	4-24-96	Analysis

JOB NUMBER : 9600.789

Ecology and Environment, Inc.
SAMPLE TRACKING REPORT

SAMPLE NUMBER	CLIENT SAMPLE ID	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED
TO-10 PCB IN AIR	-AIR			
43062.01	BLIND-PCB-A	04/23/96	04/25/96	04/26/96
43063.01	BLIND-PCB-B	04/23/96	04/25/96	04/26/96
43064.01	BLIND-PCB-C	04/23/96	04/25/96	04/26/96
43065.01	LB-PCB-A	04/23/96	04/25/96	04/26/96
43066.01	LB-PCB-B	04/23/96	04/25/96	04/26/96
43067.01	LB-PCB-C	04/23/96	04/25/96	04/26/96
43068.01	STN1-PCB	04/23/96	04/25/96	04/26/96
43069.01	STN2-PCB	04/23/96	04/25/96	04/26/96
43070.01	STN3-PCB	04/23/96	04/25/96	04/26/96
43071.01	STN4-PCB	04/23/96	04/25/96	04/26/96

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43068
SAMPLE ID CLIENT: STN1-PCB

UNITS : UG/M3
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		3.3
PCB-1254	ND		3.3
PCB-1221	ND		3.3
PCB-1232	ND		3.3
PCB-1248	ND		3.3
PCB-1260	ND		3.3
PCB-1016	ND		3.3

QUALIFIERS: C = COMMENT
J = ESTIMATED VALUE
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE
ND = NOT DETECTED
B = ALSO PRESENT IN BLANK

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43069
SAMPLE ID CLIENT: STN2-PCB

UNITS : UG/M3
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		3.3
PCB-1254	ND		3.3
PCB-1221	ND		3.3
PCB-1232	ND		3.3
PCB-1248	ND		3.3
PCB-1260	ND		3.3
PCB-1016	ND		3.3

QUALIFIERS: C = COMMENT
J = ESTIMATED VALUE
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE

ND = NOT DETECTED
B = ALSO PRESENT IN BLANK

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43070
SAMPLE ID CLIENT: STN3-PCB

UNITS : UG/M3
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		3.3
PCB-1254	ND		3.3
PCB-1221	ND		3.3
PCB-1232	ND		3.3
PCB-1248	ND		3.3
PCB-1260	ND		3.3
PCB-1016	ND		3.3

QUALIFIERS: C = COMMENT
J = ESTIMATED VALUE
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE
ND = NOT DETECTED
B = ALSO PRESENT IN BLANK

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43071
SAMPLE ID CLIENT: STN4-PCB

UNITS : UG/M3
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		3.3
PCB-1254	ND		3.3
PCB-1221	ND		3.3
PCB-1232	ND		3.3
PCB-1248	ND		3.3
PCB-1260	ND		3.3
PCB-1016	ND		3.3

QUALIFIERS: C = COMMENT
J = ESTIMATED VALUE
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE
ND = NOT DETECTED
B = ALSO PRESENT IN BLANK

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43065
SAMPLE ID CLIENT: LB-PCB-A

UNITS : UG/TUBE
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		0.10
PCB-1254	ND		0.10
PCB-1221	ND		0.10
PCB-1232	ND		0.10
PCB-1248	ND		0.10
PCB-1260	ND		0.10
PCB-1016	ND		0.10

QUALIFIERS: C = COMMENT
J = ESTIMATED VALUE
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE
ND = NOT DETECTED
B = ALSO PRESENT IN BLANK

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43066
SAMPLE ID CLIENT: LB-PCB-B

UNITS : UG/TUBE
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		0.10
PCB-1254	ND		0.10
PCB-1221	ND		0.10
PCB-1232	ND		0.10
PCB-1248	ND		0.10
PCB-1260	ND		0.10
PCB-1016	ND		0.10

QUALIFIERS: C = COMMENT
J = ESTIMATED VALUE
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE

ND = NOT DETECTED
B = ALSO PRESENT IN BLANK

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43067
SAMPLE ID CLIENT: LB-PCB-C

UNITS : UG/TUBE
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		0.10
PCB-1254	ND		0.10
PCB-1221	ND		0.10
PCB-1232	ND		0.10
PCB-1248	ND		0.10
PCB-1260	ND		0.10
PCB-1016	ND		0.10

QUALIFIERS: C = COMMENT
ND = NOT DETECTED
J = ESTIMATED VALUE
B = ALSO PRESENT IN BLANK
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43062
SAMPLE ID CLIENT: BLIND-PCB-A

UNITS : UG/TUBE
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		0.10
PCB-1254	ND		0.10
PCB-1221	ND		0.10
PCB-1232	ND		0.10
PCB-1248	ND		0.10
PCB-1260	ND		0.10
PCB-1016	ND		0.10

QUALIFIERS: C = COMMENT
J = ESTIMATED VALUE
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE
ND = NOT DETECTED
B = ALSO PRESENT IN BLANK

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43063
SAMPLE ID CLIENT: BLIND-PCB-B

UNITS : UG/TUBE
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		0.10
PCB-1254	ND		0.10
PCB-1221	ND		0.10
PCB-1232	ND		0.10
PCB-1248	ND		0.10
PCB-1260	ND		0.10
PCB-1016	ND		0.10

QUALIFIERS: C = COMMENT
J = ESTIMATED VALUE
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE

ND = NOT DETECTED
B = ALSO PRESENT IN BLANK

TEST CODE :APCB 1

JOB NUMBER :9600.789
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : ROY F. WESTON
TEST NAME : TO-10 PCB IN AIR
SAMPLE ID LAB : EE-96-43064
SAMPLE ID CLIENT: BLIND-PCB-C

UNITS : UG/TUBE
MATRIX: AIR

PARAMETER	RESULTS	Q	QNT. LIMIT
PCB-1242	ND		0.10
PCB-1254	ND		0.10
PCB-1221	ND		0.10
PCB-1232	ND		0.10
PCB-1248	ND		0.10
PCB-1260	ND		0.10
PCB-1016	ND		0.10

QUALIFIERS: C = COMMENT
J = ESTIMATED VALUE
N = ANALYTE WAS NOT CONFIRMED BY ALTERNATE PROCEDURE

ND = NOT DETECTED
B = ALSO PRESENT IN BLANK

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: May 15, 1996

TO: Nick Magriples, OSC
USEPA Region II

FROM: Smita Sumbaly
START Data Review Team

SUBJECT: **QA/QC Compliance Review Summary**

As requested quality control and performance measures for the data packages noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness	Blanks
Spectra Matching Quality	DFTPP and BFB Tuning
Surrogate Spikes	Chromatography
Matrix Spikes/Duplicates	Holding Times
Calibration	Compound ID (HSL, TIC)

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

	I Metals	II	III	IV
Acceptable as Submitted				
Acceptable with Comments	X			
Unacceptable, Action Pending				
Unacceptable				

Data Reviewed by: Smita Sumbaly Date: 05/15/96

Approved By: Jim Louie Date: 5/16/96

Area Code/Phone No.: (908) 225-6116

NARRATIVE

CASE No. 1316

SITE NAME: Cornell Dubilier Electroniucs Site

South Plainfield, Middlesex County, New Jersey.

Laboratory Name: Ecology and Environment, INC.

INTRODUCTION:

The laboratory's portion of this Case consisted of 4 Air samples, two lot blanks, two field blanks, and two lot spike blanks samples collected on April 23, 1996.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported No problems with the analyses of TAL metals (Lead, Arsenic, Cadmium and Silver).

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

IV. Inorganic: _____

_Y_ Data Summary/Tablulated Results
_Y_ Initial and Continuing Calibration
_Y_ Blanks
_Y_ ICP Interference Check
_Y_ Spike Sample Recovery
_NA_ Duplicates
_Y_ Detection Limits
_NA_ Standard Addition Results
_Y_ ICP Serial Dilutions
_Y_ Holding Times
_Y_ ICP Interelement Correction Factors
_Y_ ICP Linear Ranges
_Y_ Chain of Custody
_Y_ Raw Data
_Y_ Quantitation, Conversions, Dilutions, etc.

Comments:

1. Refer to Data Assessment Narrative.

REGION II START DATA ASSESSMENT REPORT

Title: Evaluation of Inorganic Data for the Contract laboratory Program
Appendix A.2: Data Assessment Narrative

Date: Jan. 1992
Number: HW-2
Revision: 11

CASE #:RFP # 1316 **SITE: Cornell Dubilier Electronics Site**

SDG#: MCEF-SA (43049) **LAB: Ecology & Environment, Inc.** **MATRIX: AIR: 8**

Contractor: WESTON-START **REVIEWER: Smita Sumbaly**

A.2.1 Validation Flags- The following flags have been applied in red by the data validator and must be considered by the data user.

J- This flag indicates the result qualified as estimated.

Red- Line- A red-line drawn through a sample result indicates an unusable value. The red-lined data are known to contain significant errors based on documented information and must not be used by the data user.

Fully Usable Data- The results that do not carry "J" or "red-line" are fully usable.

Contractual Qualifiers- The legend of contractual qualifiers applied by the laboratory on Form I's is found on page B-20 of SOW ILM01.0.

A.2.2 The data assessment is given below and on the attached sheets.

On April 23, 1996, USEPA Region II sampling personnel collected four (04) Air samples, two lot blanks, two field blanks, and two lot spike blanks for inorganic (lead, cadmium, arsenic and silver) analyses from the Cornell Dubilier Electronics Site, South Plainfield, New Jersey. Within twenty-four hours of collection, samples were shipped via Federal Express courier to Ecology and Environment Laboratories, Inc, Lancaster, New York. The laboratory verified that samples were received intact and properly custody sealed.

Target Analyte List (TAL) inorganic elements were analyzed for lead, cadmium, arsenic and silver following NIOSH Method No. 7300 (Elements). Samples were collected using a 37 mm diameter, 8 micron mixed cellulose filter (MCEF). Sample collection was performed at a calibrated flow rate of 3 liters/minute (L/m) for a sample period of 300 minutes which provided each sample with a calculated sample volume of 900 liters of air.

Title: Evaluation of Inorganic Data for the Contract laboratory Program
Appendix A.2: Data Assessment Narrative

Date: Jan. 1992
Number: HW-2
Revision: 11

A.2.2 (continuation)

Client identification (ID) and laboratory ID numbers are as follows:

TAL DATA

Client ID No.	Laboratory ID No.	Matrix	Sample Location
MCEF-LA	43051	Air	Lot Blank
MCEF-LB	43052	Air	Lot Blank
MCEF-FA	43053	Air	Field Blank
MCEF-FB	43054	Air	Field Blank
STN1-PB	43055	Air	Station 1
STN2-PB	43056	Air	Station 2
STN3-PB	43057	Air	Station 3
STN4-PB	43058	Air	Station 4
MCEF-SA	43049	Air	Lot Spike Blank
MCEF-SB	43050	Air	Lot Spike Blank

Title: Evaluation of Inorganic Data for the Contract laboratory Program
Appendix A.2: Data Assessment Narrative

Date: Jan. 1992
Number: HW-2
Revision: 11

A.2.2 (continuation)

The results presented in the data package are acceptable with the exception noted in the following data assessment narrative.

MATRIX SPIKE RECOVERY:-

The following TAL inorganic analytes were either qualified as estimated "J" or rejected "red-lined" in the associated samples due to spike recoveries (% R) outside of specified QC limits in the associated spike samples and because the sample result (SR) concentration < 4 X the spike added (SA) concentration:

ANALYTE	Percent Recovery	Qualifier	Associated Samples
Silver	13.0/14.2 %	"J"	MCEF-LA, MCEF-LB, MCEF-FA, MCEF-FB, STN1-PB, STN2-PB, STN3-PB & STN4-PB

PREPARATION BLANK:-

The following positive TAL inorganic data < 10 X Prep. Blank (when the CRDL is > IDL) were rejected "red-lines" because the concentration of Prep. Blank value greater than the CRDL:

ANALYTE	CRDL VALUE	Prep.Blank VALUE	Qualifier	Associated Samples
Lead	3 ug/l	25.6 ug/l	"red-lined"	STN1-PB & STN3-PB

CALIBRATION: The laboratory performed initial calibration sequence and performed continuing calibration checks at a frequency of one at every ten samples per analytical run. The percent recovery of initial and continuing calibration verification check standard results are within QC limits (80-120 %).

Title: Evaluation of Inorganic Data for the Contract laboratory Program
Appendix A.2: Data Assessment Narrative

Date: Jan. 1992
Number: HW-2
Revision: 11

A.2.2 (continuation)

A.2.3 Contract Problem/Non-Compliance:

MMB/ESAT Reviewer: _____ Signature _____ Date:

Contractor Reviewer: Smita Sumbaly Signature 05/14/96 Date:

Verified by: _____ _____

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

43051

Lab Name: ECOLOGY_AND_ENVIRONMENT__ Contract: _____

Lab Code: EANDE_ Case No.: 9600.789 SAS No.: _____ SDG No.: 43049_

Matrix (soil/water): AIR FILTER Lab Sample ID: 43051

Level (low/med): LOW__ Date Received: 04/24/96

% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): UG/FILTER

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	0.037	U		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	0.0070	U		P
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	1.4			P
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver	0.0094	B	J	P
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: CL_____ Clarity After: C_____ Artifacts: _____

Comments:

_____CLIENT_SAMPLE_ID:__MCEF-LA_____

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

43053

Lab Name: ECOLOGY_AND_ENVIRONMENT__ Contract: _____

Lab Code: EANDE_ Case No.: 9600.789 SAS No.: _____ SDG No.: 43049_

Matrix (soil/water): AIR FILTER Lab Sample ID: 43053

Level (low/med): LOW__ Date Received: 04/24/96

% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): UG/FILTER

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	0.037	U		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	0.0070	U		P
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	0.61			P
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver	0.0060	U		P
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: CL_____ Clarity After: C_____ Artifacts: _____

Comments:

CLIENT_SAMPLE_ID: MCEF-FA

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

43054

Lab Name: ECOLOGY_AND_ENVIRONMENT__ Contract: _____

Lab Code: EANDE_ Case No.: 9600.789 SAS No.: _____ SDG No.: 43049_

Matrix (soil/water): AIR FILTER Lab Sample ID: 43054

Level (low/med): LOW__ Date Received: 04/24/96

% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): UG/FILTER

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	0.049	B		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	0.0070	U		P
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	0.24			P
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver	0.0060	U	J	P
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: CL_____ Clarity After: C_____ Artifacts: _____

Comments:

_____CLIENT_SAMPLE_ID:__MCEF-FB_____

FORM I - IN ILM03.0

ecology and environment, inc.
International Specialists in the Environment
ANALYTICAL SERVICES CENTER
4493 Walden Avenue
Lancaster, New York 14086
Tel. (716) 685-8080, Fax: (716) 685-0852

April 30, 1996

Ms. Smita Sumbaly
Roy F. Weston
1090 King Georges Post Road
Suite 201
Edison, New Jersey 08837

RE: 9600.789

Dear Ms. Sumbaly:

Attached is the laboratory report of the analyses conducted on samples received at the Analytical Services Center on April 24, 1996. Analyses were performed according to procedures set forth in NIOSH 5503 and 7300.

The chain of custody form provided herein is integral to this report and must be included with the analytical results forms upon transferral to another data user.

The accuracy of all analyses depends upon the representative nature of the sample and the reliability of collection procedures as well as the accuracy of the laboratory analysis of the sample as submitted. Ecology and Environment, Inc.'s activity and representations with respect to these samples are limited solely to the laboratory analysis of the samples presented to us.

All samples on which this report is based will be retained by E & E for a period of 30 days from the date of this report, unless otherwise instructed by the client. If additional storage of samples is requested by the client, a storage fee of $1.00 per sample container per month will be charged for each sample, with such charges accruing until destruction of the samples is authorized by the client.

CASE NARRATIVE

Desorption efficiency raw data is located on pages 8-13 of this data package.

METALS

Due to software limitations, E & E identification codes have been used throughout this report. Full client ID's can be found in the comment section on form 1.

The following calculation was used for the determination of arsenic and lead in air samples:

$$\frac{\text{ug}}{\text{Liter}} \times \frac{0.01\ \text{Liter}}{1\ \text{filter}} = \frac{\text{ug}}{\text{filter}}$$

The spike recoveries for samples MCEF-SA and MCEF-SB were calculated using the associated lot blanks as the original sample results (MCEF-LA and MCEF-LB respectively).

Lead was detected in the preparation blank at 0.256 ug/filter, just above the IDL of 0.21 ug/filter. Lead was also detected in all the samples. It is not possible to redigest and reanalyze filters.

PCB in Air

The following calculations were used for the determination of PCB's in air samples:

1. $$\text{Result}\ \frac{\text{ug}}{\text{tube}} = \frac{1.0\ \text{ml final volume}}{\text{tube}} \times \text{concentration}\ \frac{\text{ug}}{\text{ml}}$$

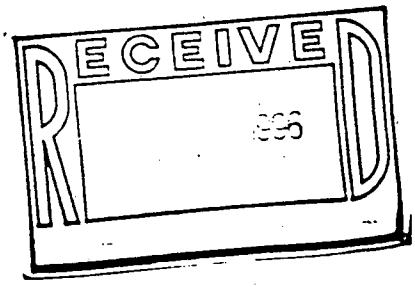
2. $$\text{liters} \times \left(\frac{1\ \text{cubic meter}}{1000\ \text{liters}}\right) = 1\ \text{cubic meter}$$

$$\text{Result}\ \frac{\text{ug}}{\text{cubic meter}} = \text{concentration}\ \frac{\text{ug}}{\text{ml}} \times \frac{1.0\ \text{ml final volume}}{\text{volume sampled (cubic meter)}}$$

Accidentally, pesticide spiking solution was added to all samples instead of PCB surrogate solution. The pesticide compounds do not interfere with the PCB pattern.

The extraction codes for the PCB in air analyses are as follows: 3200 = front end of tube, 3210 = back end of tube, 3220 = front end of spiked tube, 3290 = back end of spiked tube.

The continuing AROCLOR-1254 standards (runs 17, 28, & 35) exceeded the 15% difference criteria. Percent differences were 16%, 17%, and 24% respectively.



I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Gary Hahn - Manager
Analytical Services Center
April 30, 1996

Total number of pages in this data package is: 358 .

OTHER ANALYTES WORK TABLE

Project: Cornell Dubilier Electronics Site

START PM: Joseph Price

Sampling Date: April 23, 1996 LOT BLANKS / FIELD BLANKS, REPORTED IN µg/filter (CP)

~~SAMPLE #/CONCENTRATION (ug/M3)~~

Total Metals	Method Detection Limit	Air Filter MCEF-LA 43051	Air Filter MCEF-LB 43052	Air Filter MCEF-FA 43053	Air Filter MCEF-FB 43054		
Percent Solids		100	100	100	100		
Dilution Factor		1	1	1	1		
Arsenic	2 ug/filter	U	U	U	0.044 B		
Cadmium	1 ug/filter	U	U	U	U		
Lead	0.6 ug/filter	1.4	0.78	0.61	0.24		
Silver	2ug/filter	0.0094 J	U J	U J	U J		

SAMPLES, REPORTED IN µg/m³ (CS) 8-16-96

Total Metals	Method Detection Limit	Air Filter STN1-PB 43055	Air Filter STN2-PB 43056	Air Filter STN3-PB 43057	Air Filter STN4-PB 43058		
Percent Solids		100	100	100	100		
Dilution Factor		1	1	1	1		
Arsenic	2 ug/M3	U	U	U	U		
Cadmium	1 ug/M3	0.022 B	0.012 B	U	0.017 B		
Lead	0.6 ug/M3	R	3.5	R	7.2		
Silver	2 ug/M3	U J	0.020 BJ	U J	U J		

Inorganic Qualifiers

U – non-detected compound
J – estimated value
B – between the instrument detection limit (IDL) and the method detection limit (MDL)
R – rejected compound

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

43055

Lab Name: ECOLOGY_AND_ENVIRONMENT__ Contract: _____

Lab Code: EANDE_ Case No.: 9500.789 SAS No.: _____ SDG No.: 43049_

Matrix (soil/water): AIR FILTER Lab Sample ID: 43055

Level (low/med): LOW__ Date Received: 04/24/96

% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): UG/M3

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	0.033	U		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	0.022	B		P
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	0.86			P
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver	0.0050	U	J	P
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: CL_____ Clarity After: C_____ Artifacts: _____

Comments:

CLIENT_SAMPLE_ID: STN1-PB

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

43056

Lab Name: ECOLOGY_AND_ENVIRONMENT__ Contract: _____

Lab Code: EANDE_ Case No.: 9600.789 SAS No.: _____ SDG No.: 43049_

Matrix (soil/water): AIR FILTER Lab Sample ID: 43056

Level (low/med): LOW__ Date Received: 04/24/96

% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): UG/M3

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	0.033	U		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	0.012	B		P
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	3.5			P
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver	0.020	B	J	P
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: CL_____ Clarity After: C_____ Artifacts: _____

Comments:

_____CLIENT_SAMPLE_ID: __STN2-PB_____

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
43057

Lab Name: ECOLOGY_AND_ENVIRONMENT__ Contract: _____

Lab Code: EANDE_ Case No.: 9600.789 SAS No.: _____ SDG No.: 43049_

Matrix (soil/water): AIR FILTER Lab Sample ID: 43057

Level (low/med): LOW__ Date Received: 04/24/96

% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): UG/M3

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440 38 2	Arsenic	0.033	U		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	0.0060	U		P
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	2.6			P
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver	0.0050	U	J	P
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: CL_____ Clarity After: C_____ Artifacts: _____

Comments:

_____CLIENT_SAMPLE_ID:__STN3-PB_____

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

43058

Lab Name: ECOLOGY_AND_ENVIRONMENT__ Contract: _____

Lab Code: EANDE_ Case No.: 9600.789 SAS No.: _____ SDG No.: 43049_

Matrix (soil/water): AIR FILTER Lab Sample ID: 43058

Level (low/med): LOW__ Date Received: 04/24/96

% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): UG/M3

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440 38 2	Arsenic	0.033	U		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	0.017	B		P
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	7.2			P
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver	0.0050	U	J	P
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: CL_____ Clarity After: C_____ Artifacts: _____

Comments:

CLIENT_SAMPLE_ID: STN4-PB

CHAIN OF CUSTODY RECORD

ENVIRONMENTAL PROTECTION AGENCY – REGION II
Environmental Services Division
EDISON, NEW JERSEY 08817

RECEIVED
1993

Name of Unit and Address: Roy F. Weston - START
1090 King Georges Post Rd
Suite 201 Edison NJ 08837 (908) 225-6116

REF: RFP# 1316

Sample Number	Number of Containers	Description of Samples
		ALL SAMPLES BELOW FOR ANALYSIS PER NIOSH 7300 for LEAD, CADMIUM, SILVER, ARSENIC
MCEF-SA	1	NIOSH 7300 - LOT SPIKE A VOLUME = 0 LITERS
MCEF-SB	1	NIOSH 7300 - LOT SPIKE B GILIAN F.LTER LOT: 922I229
MCEF-LA	1	NIOSH 7300 - LOT BLANK A
MCEF-LB	1	NIOSH 7300 - LOT BLANK B
MCEF-FA	1	NIOSH 7300 - Field BLANK A
MCEF-FB	1	NIOSH 7300 Field BLANK B VOLUME = 0 LITERS
STN1-Pb	1	STATION 1 - MCEF VOLUME: 700 l
STN2-Pb	1	STATION 2 - MCEF VOLUME = 900 l
STN3-Pb	1	STATION 3 - MCEF VOLUME = 900 l
STN4-Pb	1	STATION 4 - MCEF VOLUME = 900 l

Person Assuming Responsibility for Sample: Time 5 30 pm Date 4/23/96

Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody
ALL					
	FedEx		0930	4-24-96	Analysis

A-1